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ABSTRACT

"Our Town: An Architectural Perspective" is a program for at-risk elementary school children which was instituted at Carnegie Mellon University (Pittsburgh, Pennsylvania). The goal of this effort was to introduce built-environment awareness in the public schools, where the neighborhood serves as the classroom and as a vehicle for instruction and development of community pride. Students who have difficulty performing in a typical classroom feel welcome and safe in this alternative environment. Classes are hands-on and interdisciplinary in nature, and visual and spatial literacy are at the heart of the program's educational strategy. Based on the success of a pilot project, a second program was instituted in an urban neighborhood which included children from a white, blue-collar section of the neighborhood and black children from the "projects." These children had no interaction other than their daily coexistence in school and the challenge became to use the "Our Town" program and note any similarities and differences between the outcomes of the suburban and urban student populations. Student exercises included discussing what a city is, brainstorming a list of buildings, planning the design, and developing models of buildings. For the suburban children, this was a fantasy, and a chance to role play and control an environment which is unusual to them. The urban children took control from the outset, working as a team, while the suburban children insisted on working alone. An illustration of cooperative learning, the urban example demonstrated a working knowledge of the concept of a community and its connection with the classroom while the suburban example illustrated the common classroom emphasis on individuality, invention, and product. (AEF)

"Our Town: An Architectural Perspective": A Program For Inner-city At-risk Children

by Claire B. Gallagher

Abstract

"Our Town: An Architectural Perspective" is a program for at-risk elementary school children in which the neighborhood serves as the classroom and as a vehicle for instruction and the development of community pride and self-worth in the participants. The program provides an alternative educational environment in which students who have difficulty performing in a typical classroom feel welcome and safe. Classes are hands-on and interdisciplinary in nature. Visual and spatial literacy are at the heart of "Our Town"'s educational strategy. This paper will discuss the program and suggest possible ramifications in terms of classroom practice.

Introduction

In the fall of 1992, the "Our Town" program was instituted at Carnegie Mellon University in Pittsburgh, PA. The goal of this effort was to begin a grassroots program introducing built-environment awareness in the public schools. The pilot project was established with a suburban population of fourth grade students. Twenty children, ten girls and ten boys, attended class sessions over a ten week period. These sessions focused on concepts of basic composition, urban design and architecture. There were no prerequisites for inclusion in the classes other than a general interest in the subject of architecture and the ability to pay a nominal course fee. Children worked in a group to explore the components of a town and, subsequently, design a fictitious example. An architect served as the primary facilitator with assistance from educators, teaching assistants from the Department of Architecture of Carnegie Mellon University, and other volunteers. Design of the curriculum was a collaborative effort between the architect and the director of the program.

Based on the success of the pilot project a second program was instituted in an urban neighborhood which included children from a white, blue-collar section of the neighborhood and black children from the "projects" adjacent to the school, which served to separate the two groups of students. This environment represented a "worst case scenario" in that these children had no interaction other than their daily coexistence in school. The challenge became to use the "Our Town" program in this neighborhood and to note any similarities and differences between the outcomes of the suburban and urban student populations.

Methodology - The Design Problem

The exercise began with a discussion of the question "What is a city?" This discussion led to a brainstorming session in which a list of buildings for inclusion in "Our Town". A large-scale topographic map, 7' x 14', was provided for planning the city. This map, drawn on sheets of craft paper which had been taped together, provided the framework for developing the city plan and its infrastructure. Students were given small reproductions of the plan to take home and develop a scenario and general map of the proposed city.

In a subsequent class, the drawings and text were displayed with each student presenting his/her work. A discussion followed in which general concepts for the design of the city were explored. The original list of buildings from the brainstorming exercise was edited and the students agreed upon a basic strategy for designing the city. A role playing exercise provided the vehicle through which to proceed. Issues of zoning, adjacency, and transportation were investigated in this manner. Each building from the general list was written on a 5" x 7" index card and placed on the site map. The students were free to move the cards until all conflicts regarding adjacency and other pertinent issues were resolved. Zoning was established and infrastructure was discussed.

The index cards were fixed in position with tape.

A transition was then made to a larger scale map with dimensions of 21'x42'. This map contained all the elements of the smaller version; it, too, was divided into quadrants. Students began by establishing their building locations on the map and then designed them.

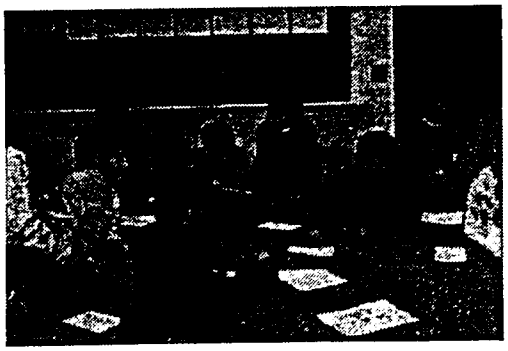
Materials were provided for the models of the buildings. These included assorted cardboard boxes, plastic containers, construction paper, tubes, straws, glitter, wallpaper samples, coffee stirrers, popcicle sticks, fabric, foil, acetate, cardboard, chipboard, paint, markers, glue, clips, fasteners, beads, etc. Students were free to choose from the available materials as they developed their models. Interaction among students was encouraged by the facilitators. Buildings were designed on their "sites" and, when completed, were fixed there. Having designed one building, each student began to design another. This process continued until all buildings were constructed and it was agreed that the town had been completed.

The Suburban Response

By discussing the notion of what a city might be, the class established the concept that a city was "a place where many different people lived together." Further, they established the fact that some people worked in a city but did not live there and needed transportation to and from their jobs.

The students began with the given map and developed a strategy for the design of their city.

Figure 1
Planning The City

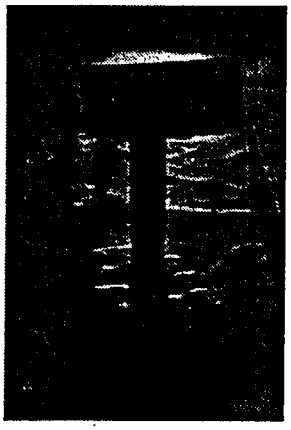


The site map was divided into four quadrants and teams of students were established to develop each section. Five students were assigned to a quadrant. Within each group, assignments for the design of the buildings were negotiated. In all but two cases, it was agreed that the buildings would be developed by individuals, not by teams. The two examples of team projects were the mall and the amusement park.

The larger scale site map was placed on the floor of the Great Hall of the College of Fine Arts Building at Carnegie Mellon University, an impressive, large space. The planning of this city was well considered. A great deal of attention was paid to issues of zoning and adjacency. Interpersonal interactions during the planning process involved a great deal of discussion and compromise. The original building list indicated references to occupations or job sites within the families of the participants (for example, the rehabilitation center) but during the editing process these personal biases were eliminated since the importance and relevance of these buildings was not universal. The remaining buildings, that were designed and placed in their context, were mainly public buildings and recreational facilities with some upscale housing. Transportation was indicated to be via subway and car only with no reference to other means of public transportation. No connections were evident between the two articulated subway stations and the streets for vehicular traffic were drawn timidly, without conviction, and visually appeared as an afterthought. There was a considerable amount of unarticulated open space within the city. During the building design phase, students were unconcerned with the adjacent designs and with the inherent ramifications regarding other buildings. The resulting designs were visually disconnected; their connection remaining one of formal planning only. There was virtually no consideration of context with no site development or landscaping. The individual buildings acted as isolated events in a homogenous space.

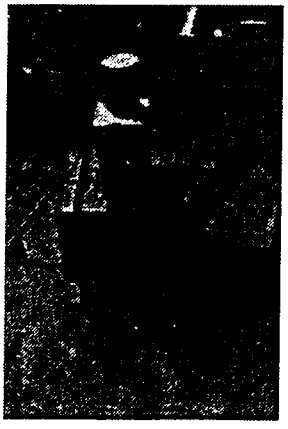
Building articulation was extensive but found only on the exterior. Kinetic elements, sophisticated formal relationships of masses (collision of forms, changes in scale, etc.), vibrant signage, and other design strategies were evident in many of the buildings but the interiors were not considered.

Figure 2
The Toy Store



Little evidence of scale or human interaction was discernible. An example of this was the fire station. This building was elevated above street level on columns in order to allow traffic to pass beneath it. No streets were indicated, however. A kinetic drawbridge allowed the firetrucks to get to the street from above. The massing and proportion of the building were very sophisticated. There were no elements of scale. No windows, doors, stairs, or other human elements were included in the design. It was, in fact, an abstraction of a fire station.

Figure 3
The Fire Station



On the final day of the program, family members and friends were invited to visit "Our Town". This open house provided and opportunity for the children to explain their work to others. The overall sense of the visitors was that the children were proud of their creation. They were able to describe their process with clarity and explain the concepts of zoning, planning, and building design through the example of "Our Town".

The Urban Response

The project began with a discussion of what a city was. It was established that a city was a "place" and that many people lived there. A lively discussion followed in which things found in a city were used to describe the term. From this, a continuation of brainstorming produced an extensive list of buildings and places. Many of these elements were recognizable as small scale components of the immediate neighborhood. Housing was discussed and, although high rises were mentioned, single family housing was stipulated as essential. Parks and open space were mentioned repeatedly.

A basic site map was produced by the facilitators and was met with enough resistance to abandon it. A new site map was designed, at full scale (20'x 40') by the students using processes of discussion, conflict, and compromise. It was constructed in the gym and fixed to the floor. Topographic features, rivers, roads, and other organizing factors were drawn directly on the craft paper with black marker (a deliberate choice of the designers).

Figure 4
Laying Out The City

Once the general map was established, the brainstormed list of elements was edited (little was seen to be irrelevant), the items were written on 5"x7" index cards, and the planning process began. A great deal of compromise was necessary to agree on the locations of major buildings. There was immediate attention to adjacency and the affect of one building on another. The context of each building was discussed at length. Transportation was a specific concern. The bus station was located conveniently for all inhabitants to utilize it. Pedestrian patterns were projected and sidewalks were added. An airport connected the city to the rest of the world. Once the general plan was established, the index cards were fixed to the map in their designated locations. No quadrants were drawn. Other impositions of order were avoided. The students assigned buildings to each other for development without interference from the facilitators. They then began to design and build. Many buildings were designed by teams. In some cases, the teams would remained intact throughout the generation of several buildings, in others, teams would recombine after the initial design was completed. Recombination might occur several times in the course of the project.

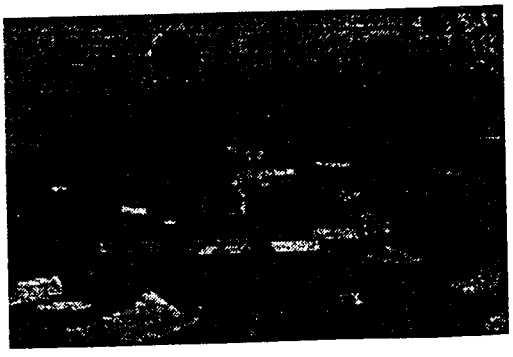
Materials were provided in large cardboard boxes placed around the site map. It was common for the students to empty the large boxes of their contents and use them for the basic structure of their buildings. Having designed one building, a student would begin to design another. The process continued until all the buildings were constructed and the students agreed that the town had been completed.

The planning process continued throughout the design of "Our Town". Issues such as access to electrical power became items for discussion and compromise. The effects of the inclusion of such elements became evident in the city. The source of power was established as the basketball hoop. Yarn was attached to the hoop and strung between thread cones that stood adjacent to buildings in the city. In order to be connected to this system, one had to negotiate with the "owners" of the utility who, in turn, would erect a tower and bring the yarn to the building. This discussion was lively and animated.

Landmarks were important in this city. Local elements such as the corner bar, the bakery and barber shop were included in the fabric of "Our Town". The buildings themselves were large in scale. The larger boxes (which had been the containers for other building materials at the outset) became the buildings, or a collection of moderately sized boxes were assembled to form a skyscraper, for example. In general, the scale of the buildings was consistent, although the buildings were out of scale in relation to that of the site map.

Building articulation was extensive both on the exterior and the interior. Every building had open doors and a sense of scale implied by the inclusion of human figures made of cardboard or pipecleaners. Many buildings were personalized in terms of concept and content. An example was a hospital for babies designed by a girl whose sisters had all had children by the age of sixteen. The designer had constructed all of the beds (plastic fruit containers), mattresses (batting and fabric), pillows (batting and fabric), and bedclothes (fabric) and placed them carefully in the building in a specific orientation. The entire site surrounding the hospital was landscaped with flower gardens (egg cartons with paper flowers on pipecleaners in each section), paths for walking and areas for parking.

Figure 5
The Hospital For Babies



The bus connected other parts of the city to the hospital. An elaborate scenario was embedded in this project. Its designer was proud of her design and would describe it in detail if questioned.

Another example of personalized projects was the middle school. The boy who designed it spent the first few classes accusing everyone of hating him and threatening him. He would not work in the group and sat alone on a bench against the wall of the gym. Facilitators sat with him on his bench and encouraged him to become a part of the design process. After several attempts at inclusion, the boy showed an interest in designing the school. His design was large in scale with a fully open facade that revealed all the elements of a traditional school: chalkboard, desks with chairs in rows, teacher's desk, book shelves, a globe, etc. Lighting was provided through clerestory windows located in a sophisticated roof structure that was folded and fastened to form a unique shape. He named the school after himself and added the name of his architect "teacher".

Figure 6
The Middle School

An element of competition was evident in the two skyscrapers in "Our Town". Two teams were trying to build the tallest one. Trial and error regarding structural issues of height and proportion led to two different, but successful, designs for tall buildings. There were several failures before the design was perfected and each tower was limited by its base to height ratio. At the conclusion of the project, however, the designers demonstrated an understanding of the concepts embedded in the design of a tower.

Figure 7
The Winning Skyscraper

The design process continued until the site map was full of elements, the list of buildings had been addressed, and the class agreed that the city was complete. A document was produced by the children in which they described their process through a series of images (drawn manually and with the aid of a computer) and text. The students were responsible for choosing the content and formatting the document. The last class meeting was in the form of an open house during which time the students could explain their work to friends and family. Descriptions included walks around "Our Town" (shoes were removed at the request of the students) and the recounting of the scenarios that served as points of departure for the designs. The printed document was distributed at this time.

What the Children's Designs Tell Us

The strength of this educational strategy with at-risk populations is evident in the work of the children from the "Our Town" project. There are some compelling arguments for the use of visual and spatial instruction with inner-city children. Some of the differences in the process and products of the two populations of children in this study are obvious. For educators these differences have direct implications in terms of classroom practice.

The typical means of instruction in our educational culture is either linguistic and/or mathematical. Rarely is any attention paid to visual or spatial thinking or problem-solving. The "Our Town" project demonstrates an example of the latter in which children are given the freedom to design and build an environment of their own. For the suburban children in this study this was fantasy, a game. For the urban children this was real life, a chance to role play and control an environment, albeit imaginary, which is an unusual condition for them to experience. For them it was problem solving of the highest order. From the beginning of the exercise the suburban children accepted the parameters of the problem as given by the facilitators. The urban children did not, taking control from the outset. They worked as a team to design their city while the suburban children insisted on working alone. The urban example demonstrated a working knowledge of the concept of community and its connection with the classroom while the suburban example illustrated the common classroom emphasis on individuality, invention and product. The process in the urban "Our Town" project was revealing as a natural example of cooperative learning. It had a life of its own.

Developing a curriculum around these classroom strengths could serve as a springboard to other content areas. The possible implications of this are numerous but the success of this approach, especially with urban children, would indicate the usefulness of the integration of visual and spatial thinking and problem-solving with at-risk populations. Architecture, by its nature, is interdisciplinary and would be an appropriate choice for a theme for such a curriculum. This, of course, poses tremendous challenges for educators but the potential is there to address a motivational and educational issue in real terms. Perhaps, in this way, at-risk children such as these could be sent a different message than they typically hear in the classroom: one of strength, hopefulness, and success.

Epilogue

The "Our Town" project has been expanded to four phases. These take place over the course of a year and can briefly be described as follows:

Phase One: Designing "Our Town"

Phase Two: Landmarks Past and Present

Students document their neighborhood in drawings, models, and interviews of long-time residents to uncover the history of the neighborhood. The concept of landmarks is used as the point of departure for this phase.

Phase Three: Neighborhood Intervention

Students compare the findings from Phases Two and One. Differences between the ideal and the real conditions of the neighborhood are discussed and possible solutions are proposed. Students work in teams to identify needs and design interventions for sites in the neighborhood. These ideas are presented to neighborhood organizations, residents, potential project funders, the mayor and other elected officials, and the community at-large. A project is chosen from among the submissions based on design and feasibility.

Phase Four: Implementation of the Design

With the help of community members, educators, local organizations, architects, landscape architects, and others the students build the chosen community intervention. This final phase has resulted in a new community park in one Pittsburgh neighborhood complete with landscaping, street furniture and lighting, and a new sidewalk with the names of those who helped inscribed in ceramic panels set into the concrete. The lesson to be learned is profound: a small group of children made something very important happen. Their neighborhood helped them become part of the process and they have improved their neighborhood. "Our Town" provides a compelling example of the neighborhood as classroom and for the use of visual and spatial thinking and problem solving as the vehicle for instruction with at-risk children.

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